UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/697,859 | 10/30/2003 | Kevin J. Gildea | POU920030146US1 | 9769 |

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| EXAMINER |
|---|
| WANG, LIANG CHE A |

| ART UNIT | PAPER NUMBER |
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| 2153 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/697,859 | GILDEA ET AL. |
| | Examiner | Art Unit | |
| | Liangche A. Wang | 2153 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>09 May 2008</u>.

2a)☒ This action is **FINAL**.　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>12-20</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>12-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)　　　　　　**Office Action Summary**　　　　　　Part of Paper No./Mail Date 20080626

## DETAILED ACTION

1.  Claims 12-20 are presented for examination.

2.  Claims 1-11, 21-30 are canceled.


### *Response to Arguments*

3.  Applicant's arguments filed 5/9/2008, have been fully considered but they are not

persuasive.

4.  In that remarks, applicant's argues in substance:

    a.  Applciant argues that the dedicated collective offload engine being implemented

        as a hardware device, and the office action assert that the remote computer is a

        hardware device. Applicant argues that the remote computer is not a hardware

        device in hardware only, but both hardware and software.

            In response to applicant's argument, the remote computer as disclosed by

        Burianek is indeed comprises both hardware and software, however, the remote

        computer still meets the required limitation "hardware device". In any packet and

        data processing system, hardware and software are both required for the system to

        function.

Updated rejection is provided.


### *Claim Rejections - 35 USC § 112*

5.  The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making
and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
contemplated by the inventor of carrying out his invention.

6. Claims 12-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with
   the written description requirement. The claim(s) contains subject matter which was not
   described in the specification in such a way as to reasonably convey to one skilled in the
   relevant art that the inventor(s), at the time the application was filed, had possession of
   the claimed invention. No support of that limitation "providing collective processing in
   hardware of data from the at least some processing nodes" in claim 12 can be found in the
   specification.

7. Claims 12-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with
   the enablement requirement. The claim(s) contains subject matter which was not
   described in the specification in such a way as to enable one skilled in the art to which it
   pertains, or with which it is most nearly connected, to make and/or use the invention.
   Claim 12 recites the limitation "providing collective processing in hardware of data from
   the at least some processing nodes", however the system provided in the specification is
   not able to process **in hardware**.

8. All dependent claims are rejected to as having the same deficiencies as the claims they
   depend from.


*Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
   basis for the rejections under this section made in this Office action:

   A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 12, 14-17, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by

Burianek et al., US Patent Number 7,082,457, hereinafter Burianek.

11. Referring to claim 1, Burianek teaches a method of processing comprising:

    a. providing, by a dedicated collective offload engine(server 215) coupled to a

       switch fabric (Figure 1, WLAN 13 comprises a switch, Col 5 lines 4-10) in a

       distributed, parallel computing system (system 200, figure , resource client 235,

       240, 245 are parallel to the server 215), collective processing of data from at least

       some processing nodes of multiple processing nodes (resource client 235, 240,

       245) of the distributed, parallel computing system (Col 5 lines 58-67, server

       processes data received from clients), the dedicated collective offload engine

       being (server 215) a hardware device (Col 4 lines 20-45, server is a computer,

       which is a hardware device with software) coupled to the switch fabric (Figure 1,

       WLAN 13 comprises a switch, Col 5 lines 4-10, clients and server are connected

       via WLAN), the hardware device being a specialized device to providing

       collective processing in hardware of data from the at least some processing nodes,

       the collective processing implementing a collective operation on the data from the

       at least some processing nodes (Col 5 lines 58-67).

    b. producing, by the dedicated collective offload engine (server 215) a result based

       on said collective processing (Col 5 lines 58-63); and

    c. forwarding said result to at least one processing node of the multiple processing nodes (Col 5 lines 63-67).

    d. Referring to claim 14, Burianek teaches the method of claim 12, further comprising: receiving and storing, at a payload memory (database 210, figure 2), the data from the at least some processing nodes of the multiple processing nodes, wherein said payload memory is a component of the dedicated collective offload engine (Col 5 lines 58-63); and retrieving and performing, at an arithmetic logic unit (ALU) (information server 225), the collective processing of data stored in the payload memory (database 210, figure 2), wherein said ALU is a component of the dedicated collective offload engine and is coupled to the payload memory (Col 6 lines 4-27).

12. Referring to claim 15, Burianek teaches the method of claim 14, further comprising: controlling the collective processing of the data from the at least some processing nodes of the multiple processing nodes, wherein said controlling is performed by a dispatcher (delegation component 220) of the dedicated collective offload engine (server 215) coupled to the ALU (information server 225), and in communication with the at least some processing nodes of the multiple processing nodes (client 235, 240, 245) via the switch fabric; and controlling, by the dispatcher, the sharing of the result with the at least one processing node of the multiple processing nodes (Col 5 lines 49-52).

13. Referring to claim 16, Burianek teaches the method of claim 15, further comprising: storing, in at least one task table (assignment table 810) coupled to the dispatcher (delegation component 220), task identification information (task ID 815) related to the at

least some processing nodes of the multiple processing nodes, wherein said at least one

task table is a component of the dedicated collective offload engine (Col 9 lines 15-19);

and storing, in at least one synchronization group table coupled to the dispatcher,

identification information related to one or more groups of the at least some processing

nodes of the multiple processing nodes, wherein said at least one synchronization group

table is a component of the dedicated collective offload engine (Col 9 lines 19-24).

14. Referring to claim 17, Burianek teaches the method of claim 15, further comprising:

communicating, via an adapter, across the switch fabric using a link protocol, wherein

said adapter is coupled to the switch fabric and is a component of the dedicated collective

offload engine; and facilitating, by interface logic, communication between said adapter

and said payload memory and between said adapter and said dispatcher, wherein said

interface logic is a component of the dedicated collective offload engine (figure 1,

inherent features for connection communication devices).

15. Referring to claim 20, Burianek teaches the method of claim 12, wherein said providing

collective processing includes executing at least one collective operation for the at least

some processing nodes of the multiple processing nodes without using a software tree

(Col 1 line 52- Col 2 line 50, no software tree is used).


### Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 13. 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burianek.

18. Referring to claim 13, Burianek teaches the invention as described in claim 12, although Burianek does not teach wherein in the collective operation is a MPI collective operation. However, MPI collective operation is a standard operation, therefore it would be obvious for a person with ordinary skill in the art to use any standard on the system taught by Burianek.

19. Referring to claim 18, 19, Burianek teaches the invention as described in claim 12, and Burianek does not teach a plurality of collective offload engines in communication with one another to facilitate the collective processing of data. However, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have multiple servers as server 215 in figure 2, in order to accomplish load balancing for process requests from clients 235, 240, 245. And communication among serves using switch fabric or direct connections are known in the art.

     A person with ordinary skill in the art would have been motivated to make the modification to Burianek because having multiple offload engines in communication with one another would have reduce and avoid heavy loads of request in one offload engine.

### *Conclusion*

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.  In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action.  In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Liang-che Alex  Wang whose telephone number is

(571)272-3992.  The examiner can normally be reached on Monday thru Friday, 8:30 am

to 5:00 pm.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Glenton B Burgess can be reached on (571)272-3949.  The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system.  Status information for published

applications may be obtained from either Private PAIR or Public PAIR.  Status

information for unpublished applications is available through Private PAIR only.  For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Liang-che Alex Wang
June 26, 2008

/Liangche A. Wang/
Primary Examiner, Art Unit 2153